

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
29 September 2005 (29.09.2005)

PCT

(10) International Publication Number  
WO 2005/091450 A1

(51) International Patent Classification<sup>7</sup>: H01S 5/06,  
5/125, G02F 1/37

(21) International Application Number:  
PCT/JP2005/005618

(22) International Filing Date: 18 March 2005 (18.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2004-084439 23 March 2004 (23.03.2004) JP

(71) Applicant (for all designated States except US): CANON  
KABUSHIKI KAISHA [JP/JP]; 3-30-2, Shimomaruko,  
Ohta-ku, Tokyo, 1468501 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): FUJII, Kazunari  
[JP/JP]; c/o CANON KABUSHIKI KAISHA, 3-30-2, Shi-  
momaruko, Ohta-ku, Tokyo, 1468501 (JP). FURUKAWA,  
Yukio [JP/JP]; c/o CANON KABUSHIKI KAISHA,  
3-30-2, Shimomaruko, Ohta-ku, Tokyo, 1468501 (JP).

(74) Agents: OKABE, Masao et al.; No. 602, Fuji Bldg., 2-3,  
Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-0005 (JP).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG,  
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,  
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

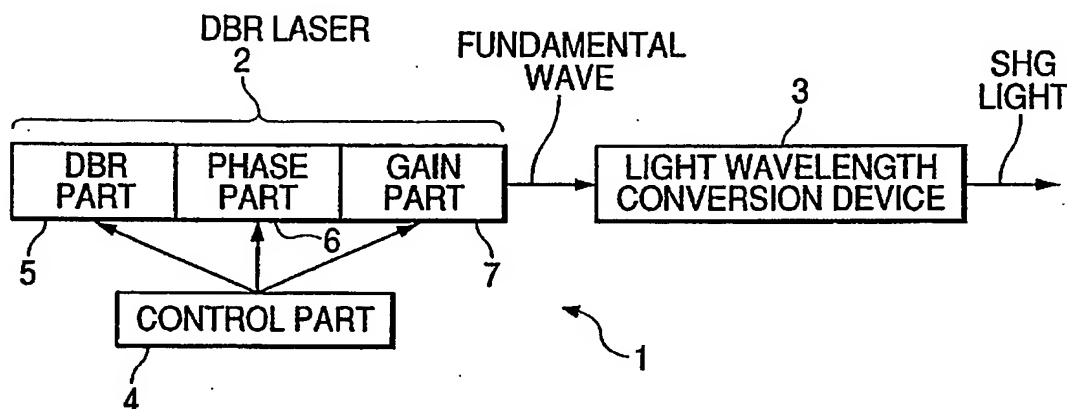
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: MODULATION LIGHT SOURCE, IMAGE DISPLAY APPARATUS INCLUDING THE SAME, AND METHOD OF  
DRIVING MODULATION LIGHT SOURCE



(57) Abstract: A modulation light source capable of maintaining thermal stability of a gain part is provided. A modulation light source includes a DBR laser having a DBR part, a phase part and a gain part, a light wavelength conversion device that receives a fundamental wave from the DBR laser and from which an SHG light is emitted, and a control means for controlling the DBR laser. A substantially constant current is supplied to the gain part for a modulation time period of a PWM signal. At least one of the DBR part and the phase part is controlled for modulation using a current based on the PWM signal.

WO 2005/091450 A1